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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/912,201	07/24/2001	Dieter Maurer	1650	6490

7590 11/19/2002  
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EXAMINER

NGUYEN, TUAN N

ART UNIT PAPER NUMBER

2828

DATE MAILED: 11/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/912,201

Applicant(s)

MAURER ET AL.

Examiner

Tuan N Nguyen

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on 24 July 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 July 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☒ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.

- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Priority***

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 09 912 201, filed on July 24, 2001.

### ***Information Disclosure Statement***

2. The information disclosure statement filed July 24, 2001 have been placed in the application file, and the information referred to therein has been considered as to the merits. See the attached, initialed copies.

### ***Drawings***

3. New corrected drawings are required in this application because it is not acceptable to the draftsman, see the attached Notice of Draftsman drawing review. The figures are not labeled as required by 37 CFR 1.83(a). The corrected drawings are required in reply to the Office action.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-13 are rejected under 35 U.S.C 112, second paragraph, as being indefinite, vague, and confusing for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 2828

Claim 1 recites “a *laser diode arrangement*, comprising a joint *electrically insulating substrate*, a *plurality of laser diodes* arranged on said joint substrate; *conductor structure provided on said substrate* so that said layer diode are connected with one another through said conductor structures; and *means for joint control* of said laser diodes”. It is vague, unclear and indefinite as to what the plurality of laser diodes arrangement is (parallel / series / mixture), and it is indefinite as to what is the conductor structure consist of or its relation on the substrate in connection with the laser diodes – which is the main point of the invention. Claims 2-13 rejected based on the same reason.

Claims 2, 3, 4 recites “... as defined in claim 1, wherein ...*said support* ...”. The claim lacks of antecedent or not clear as to what “support” the claims referring to.

Claim 6 recites “... and *second electrodes which contact said conductor structures through first bond wires*.” The sentence is not clear in structure or in relationship.

Claim 7 recites “... and contacting *with said first-mentioned conductor structure* on said substrate...” It is unclear if there is another conductor structure in this laser diode arrangement.

### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of 35 U.S.C. 102(b) which forms the basis for all obviousness rejections set forth in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 2828

Claims 1, 12, 13 are rejected under 35 U.S.C. 102(b) as being unpatentable Shieh et al. (US 5780321). Shieh et al. shows in figure 1 and discloses in the abstract and column 4, the LED packaging and method of fabrication, where emitting diode array (10) on a substrate (12) having a conductive layer (16). It is inherent that the diode laser has a source and a means for controlling to make it operable.

*Claim Rejections - 35 USC § 103*

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or non-obviousness.

8. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable Shieh et al. (US 5780321) in view of Herb et al. (US 5325384).

With respect to claims 2-4 Shieh et al. ('321) discloses the above except substrate has high thermal conduction coefficient and good thermal coupling to a support as a cooling body.

Art Unit: 2828

Herb et al. shows in figure 1a, 2, and discloses structure and method for mounting laser diode array mounted on a heat spreader and cool back plane which act as heat sink in removing the heat (col 1: 45-50; col 2: 0-5). It would have been obvious to one of ordinary skill in the art to provide Shieh et al. ('321) the element as taught or suggested by Herb et al. ('384) to have laser array mounted a cooling body for temperature regulating.

With respect to claims 6, 7, Herb et al. shows in figure 2 where bond wire is connect between laser diode and substrate.

9. Claims 5, 9, 10 are rejected under 35 U.S.C. 103(a) as being unpatentable Shieh et al. (US 5780321) in view of Mayor et al. (US 6018602).

With respect to claims 5, 9, and 10 Shieh et al. ('321) discloses the above except that it is use as pump module for optical communication, having a joint monitor diode for monitoring laser diode. Mayor et al. ('602) shows in figures 6, 7 and discloses in column 1 an arrangement for space-based optical pump (col 1: 12-55) embodied as optical wave guides, with a plurality of laser diode (fig 6: 84) and regulation of current through laser diode is through a control unit by means of a photodiode (fig 6: 80, 88; col 7: 5-15). He further discloses the use of nitrogen to carry away locally created heat (col 2: 12-15; col 4: 5-20). It would have been obvious to one of ordinary skill in the art to provide Shieh et al. ('321) the element as taught or suggested by Mayor et al. ('602) to have pump module having a temperature regulating unit to regulate the laser diodes temperature in a given tolerance.

Art Unit: 2828

10. Claims 8 are rejected under 35 U.S.C. 103(a) as being unpatentable Shieh et al. (US 5780321) in view of Gehring (US 4438347).

With respect to claim 8 Shieh et al. ('321) discloses the above except short circuit bridges. Gehring ('347) shows in figure 1 with the use of the short circuit bridge. It would have been obvious to one of ordinary skill in the art to provide Shieh et al. ('321) the short circuit as suggested by Gehring ('347) to jump between defective laser diodes.

#### *Citation of Pertinent References*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. It is cited primarily to show the product of the instant invention.

De La Chapelle et al. (US 4832433), Kneissl et al. (US006365429B1), Fujikawa et al. (US005883737A), Shieh et al. (US5621225), Okuno (US 4298869), Reymond (US005936599A), Ortiz (US 5736881), Mansfield (US005841648A), Ortiz (US005287372A), Hochstein (US 5661645), Freitas et al. (US005909458A), Orberman (US005925897A), Holm et al. (US005940683A) (US005751159A), Staskus et al. (US005923692A), Okayasu (US006201822B1), Ishinaga et al. (US006290334B1) disclose optical signal transmission apparatus with array of laser diode and formation of laser diodes on substrate.

#### *Communication Information*

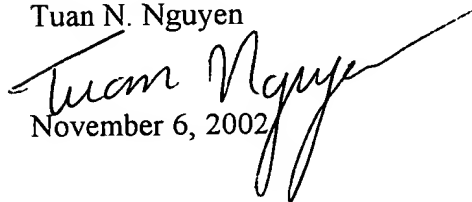
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan N Nguyen whose telephone number is (703) 605-0756. The examiner can normally be reached on M-F: 7:30 - 4:30PM.

Art Unit: 2828

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-8592 for regular communications and (703) 746-8592 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

Tuan N. Nguyen



November 6, 2002



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